

was unrepresented, but was not even allowed to speak on its own behalf. His son, whose thoughts may have been turned to the subject by the experience of his father, gathered together a series of papers relating to the treatment of these Quakers and published them in 1848, under the title: "Exiles in Virginia, with Observations on the Conduct of the Society of Friends during the Revolutionary War."

Father and son were members of the Philosophical Society, the former, one of the first members; the latter, elected in 1814. Thomas Gilpin was a regular attendant at the meetings of the Philosophical Society, and dedicated other pamphlets than the one on MINORITY REPRESENTATION to the Society, notably one entitled, *An Essay on Organic Remains as Connected with an Ancient Tropical Region of the Earth*.

The history of this pamphlet on proportional representation illustrates in a striking way how there is a time for everything, and how everything must wait for its time. Written at a period when there was a general demand for some kind of reform in our system of representation, it undertook to show how, by adopting a system of proportional representation, the general ticket and caucus system could be made to yield satisfactory results. It failed to accomplish its immediate purpose: and only now, after fifty years, is beginning to bear practical fruit. The caucus system and the single-member district system have not yielded the result hoped for. Whether any scheme of proportional or minority representation can do better, may be a question; but it begins to look as if some such method were destined to have a trial, and in such an event, Gilpin's plan has much to recommend it.

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*Notes on Photographic Testing of Inks.*

*By S. P. Sharples.*

From the committee appointed by the Society to investigate the various methods for the examination of documents.

*(Read before the American Philosophical Society, December 20, 1895.)*

Having had occasion to examine a will for alterations recently, it occurred to me that inks of different composition might have different actinic values. In the case in question, the register allowed the will to be photographed in the presence of one of his officers. A negative was thus obtained, which showed on printing an exact copy of the will. Printed in the ordinary way it served all purposes for the examination of the writing. It showed very plainly the places where alterations had been made, and there was no question but these alterations had been made by the person who wrote the will. He acknowledged that he had

made the changes, but said that he had made them before the signing of the will.

On examining the writing with the microscope, I became convinced that the alterations were in part at least made with a different ink. If writing is done with a thin ink such as is used in fountain pens, and which is generally made from some aniline preparation such as induline or nigrosine, it will be found that the ink acts in a very peculiar manner. The coloring matter collects on the edges of the stroke, and these are much more intense in color than the centre of the mark. The stroke may be defined as a road with a hedge on either side of it. This peculiarity is found in many other inks when they are first applied to the paper. But as the ink ages, in the case of the so-called chemical inks the centre of the stroke becomes dark and the contrast disappears. In the case of the inks which undergo no chemical change, the contrast is permanent. The examination under a microscope serves to demonstrate these points to an expert and fully satisfy him. But unfortunately neither judges nor juries are experts, and you can never rely on either of them to see things that are perfectly plain. It struck me that by the aid of the photograph I could bring out these differences. I first tried enlarging the photograph. The printer produced a good picture, but in his desire to make a good print he spoiled it for my purposes. I got him to make another trial, telling him I did not want a good picture, but one that was very much under exposed. This brought out the differences in the ink well. The portion written with the aniline ink had almost disappeared, except the edges of the stroke. That written with the chemical ink was almost as distinct as in the first print. I also made a number of contact prints, exposing the paper under the negative a very short time, and in this manner getting prints in which the contrast between the two inks was very marked. Lantern slides were also prepared from the negatives. These also showed the differences in the inks very plainly. In practice I would suggest that two negatives be made of the writing, a strong and a weak one; that prints be made from each of these in the way above spoken of, that is, gradually increasing in strength, and that several lantern slides be made from the negatives in the same manner as the prints. These slides when projected on the screen will serve to bring out the differences in the inks of which I have spoken. The court and defense in this case became fully convinced that the writing was done with a different ink, but the defense was equal to the occasion, and having found out what kind of ink would answer the purpose, they swore that there were two kinds of ink on the table where the will was written, and that the alterations were made from the ink in the second bottle. This second bottle was used only for the alterations; all the signatures were made with ink similar to that used in the body of the will. One witness swore positively that the alterations were made at a different place, and with such an ink as I described; that is, an ink that had been exposed to the air for a long time.